

REMARKS

This is a full and timely response to the non-final Official Action dated **October 13, 2010** (the “Office Action” or “Action”). Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

Claim Status

No previously existing claims have been cancelled or amended. The present paper adds new claims 11-20. Consequently, claims 1-20 are pending for further action.

Allowable Subject Matter

In the recent Office Action, the Examiner indicated the presence of allowable subject matter in claims 2 and 9. (Action, pp. 9-10). By virtue of this finding of allowable subject matter in claim 2, the Office has also implicitly indicated the presence of allowable subject matter in claims 3-4, which depend from claim 2. Applicant wishes to thank the Examiner for this finding of allowable subject matter.

Applicant agrees with the Examiner's conclusions regarding patentability, without necessarily agreeing with or acquiescing in the Examiner's reasoning. In particular, Applicant believes that the indicated claims, and the application in general, are allowable because the prior art fails to teach, anticipate or render obvious the invention as claimed, independent of how the claims or claimed subject matter may be paraphrased.

Objection to Drawings

The Action objects to the drawings under 37 C.F.R. § 1.83(a) as allegedly failing to show every feature of the invention specified in the claims. (Action, p. 2). In particular, the Examiner believes that the “disposing [of] said interface expander controllers on a single Application Specific Integrated Circuit” recited in claim 10 is not shown in the drawings. (*Id.*). Applicant respectfully disagrees. Fig. 10 shows a block diagram including of a system having logic (66) to interface with and control multiple external electronic control units (30A-30E) and multiple external generic CPUs (40). (Specification, Fig. 10 and pp. 11-12). Thus, each subsystem of physical logic for interfacing with and controlling a separate electronic control unit taught in Fig. 5 reads on an “interface expander controller” recited in independent claim 8 and dependent claim 10. Additionally, the specification teaches that “[a]ll logic detailed in fig. 5 or fig. 4 may be advantageously provided in form of a programmable ASIC, or a static ASIC.” (Specification, p. 11 lines 1-2). Taken in this context, Fig. 5 plainly shows a single ASIC that embodies multiple interface expander controllers within the scope of claim 10. Consequently, the objection to the drawings is improper and should be reconsidered and withdrawn.

Prior Art

1. Claims 1 and 7-8 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious over the alleged admitted prior art, taken alone. For at least the following reasons, this rejection is improper and respectfully traversed.

Claim 1

Claim 1 recites:

A circuit in an embedded processing system covering a number of technical applications, a number of operative functions of the number of technical applications being performed via a respective number of application-specific Electronic Control Units (ECU), the circuit comprising:

a) a number of controller means for controlling respective application specific ECUs, each of the controller means comprising a number of application-specific support functions and I/O subsystems; and

b) a number of processor units each having an I/O-interface operatively connecting to a respective one of the controller means and supplying that controller means with computing power,

wherein at least one of the processor units and a respective controller means are implemented on different chips.

(Emphasis added).

To begin, Applicant respectfully notes that “[t]he examiner bears the initial burden . . . of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). A *prima facie* case of obviousness made under 35 U.S.C. § 103(a) requires a showing that all of the subject matter in the claim at issue would be obvious to one having ordinary skill in the art based on the teachings of the cited prior art at the time of invention. *See* M.P.E.P. § 2143.

The recent Office Action does not make a *prima facie* case of obviousness against claim 1 because it fails to provide sufficient evidence that the alleged admitted prior art would render obvious the subject matter of claim 1 to one having ordinary skill in the art at the time of the invention. Specifically, the alleged admitted prior art does not teach or suggest that “at least one of the processor units and a respective controller means are implemented on different chips.” (Claim 1).

The alleged admitted prior art is the “Description and Disadvantages of Prior Art” section of Applicant’s specification. This section teaches that prior art electronic control units include “quite specialised expensive components” where “a dedicated single- or multiprocessor unit” is applied “to achieve one particular function” for a specific electronic control unit. (Specification, “Description and Advantages of Prior Art.”). The alleged admitted prior art does not teach or suggest anywhere that “at least one of the processor units and a respective controller means are implemented on different chips.” (Claim 1).

The Action asserts that it would have been obvious to one having ordinary skill in the art to implement respective controller means and processor units on different chips “because it would merely be an alternative arrangement or choice of design that would not affect the functionality of the invention.” (Action, p. 4). Applicant strongly disagrees.

The Board of Patent Appeals and Interferences has refused to uphold rejections in which the examiner simply alleged that the relevant feature of a claimed invention is a mere “design choice.” Such a statement, in the words of the Board, “is a conclusion, rather than a reason.” *Ex parte Garrett*, 1986 Pat. App. LEXIS 8, 4 (BPAI 1986). Furthermore, the Federal Circuit has noted that “[t]o imbue one of ordinary skill in the art with knowledge of the invention [at issue], when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effects of a hindsight syndrome.” *In re Fine*, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (quoting *W.L. Gore & Assoc. v. Garlock, Inc.*, 220 USPQ 303, 312-13 (Fed. Cir. 1983)).

In a case from earlier this month, the Board of Appeals and Interferences reversed a rejection made based on an assertion of “mere design choice,” noting that such an assertion

amounts to a *per se* rule of unpatentability, which is “legally incorrect” and “inconsistent with section 103, which, according to *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966) and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention as claimed in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations.” *Ex parte Pennell*, Appeal 2009-009274, (B.P.A.I. Dec. 7, 2010) (slip op., at 6). In making this statement, the Board further emphasized the need to resolve the factual inquiries of *Graham* in determining the obviousness of a claim. *Id.*

Moreover, even if *arguendo* “mere design choice” were an acceptable basis for establishing the obviousness of the differences between the cited prior art and what is claimed, Applicant notes that separating the dedicated processor from the remaining components of the electronic control unit taught in the alleged prior art would not be a matter of mere design choice having no effect on the functionality of the invention. No one having ordinary skill in the art at the time of the invention would have found any motivation to implement these components on separate chips, as doing so would interaction between two different chips and require additional engineering to create a reliable interface between the two chips. The advantages proposed by Applicant’s claims and specifications were not known or contemplated within the ordinary skill in the art. As such, no one having ordinary skill in the art would have found any advantage to implement a dedicated processor on a separate chip from the remaining components of an electronic control unit. For at least these reasons, the subject matter of claim 1 not taught by the alleged admitted prior art would not have been an obvious alternative arrangement or choice of design to the skilled artisan.

According to the Supreme Court, the factual inquiries set forth in *Graham* “continue to define the inquiry that controls” obviousness rejections under 35 U.S.C. § 103. *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 407 (2007). Under the analysis required by *Graham* to support a rejection under 35 U.S.C. § 103,

the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.
Graham, 383 U.S. at 17-18.

While these inquiries are factual, the ultimate determination of obviousness is a conclusion of law made in view of the totality of the resolved *Graham* factors. *KSR*, 550 U.S. at 427; *Graham*, 383 U.S. at 17.

Applying the *Graham* analysis to the present rejection of claim 1, the scope and content of the prior art, as evidenced by the admitted prior art, does not include all of the claimed subject matter, particularly that “at least one of the processor units and a respective controller means are implemented on different chips.” (Claim 1).

The differences between the cited prior art and claim 1 are significant because the claimed subject matter provides features and advantages not known or available in the cited prior art. Therefore, no one having ordinary skill in the art at the time of the invention would have been arrived at the claimed subject matter based on the teachings of the alleged prior art.

Consequently, the cited prior art will not support a rejection of claim 1 under 35 U.S.C. § 103 and *Graham*, and the Office has not met its requisite burden to establish the *prima facie* obviousness of claim 1. For at least these reasons, the rejection of claim 1 and its dependent claims should be reconsidered and withdrawn.

Claim 8

Claim 8 recites:

A method of operating an embedded processing system comprising:
controlling a number of electronic control units with a number of interface expander controllers, *wherein said interface expander controllers are disposed on a separate chip from said electronic control units*; and
providing computing power to said interface expander controllers with a separate number of processors.

(Emphasis added).

The alleged admitted prior art also fails to render obvious the method of claim 8, because the alleged admitted prior art does not teach or suggest all of the subject matter recited in claim 8.

In particular, as demonstrated above with respect to claim 1, the alleged admitted prior art fails to teach, suggest, or otherwise render obvious the subject matter of “said interface expander controllers [being] disposed on a separate chip from said electronic control units.” (Claim 8).

Applying the *Graham* analysis to the present rejection of claim 8, the scope and content of the prior art, as evidenced by the admitted prior art, does not include all of the claimed subject matter, particularly “said interface expander controllers [being] disposed on a separate chip from said electronic control units.” (Claim 8).

The differences between the cited prior art and claim 8 are significant because the claimed subject matter provides features and advantages not known or available in the cited prior art. Therefore, no one having ordinary skill in the art at the time of the invention would have been arrived at the claimed subject matter based on the teachings of the alleged prior art.

Consequently, the cited prior art will not support a rejection of claim 8 under 35 U.S.C. § 103 and *Graham*, and the Office has not met its requisite burden to establish the *prima facie*

obviousness of claim 8. For at least these reasons, the rejection of claim 8 and its dependent claims should be reconsidered and withdrawn.

2. Claim 5 stands rejected under 35 U.S.C. § 103(a) as being allegedly obvious over the alleged admitted prior art in view of U.S. Patent No. 6,408,407 to Sadler. This rejection is respectfully traversed and should be reconsidered and withdrawn for at least the same reasons given above in favor of the patentability of independent claim 1. *See In re Fine*, 837 F.2d 1071, 1076, 5 USPQ2d 1596 (Fed. Cir. 1988) (if an independent claim is nonobvious, then any claim depending therefrom is nonobvious); M.P.E.P. § 2143.03.

3. Claim 6 stands rejected under 35 U.S.C. § 103(a) as being allegedly obvious over the alleged admitted prior art in view of U.S. Patent No. 6,222,484 to Seiple. This rejection is respectfully traversed and should be reconsidered and withdrawn for at least the same reasons given above in favor of the patentability of independent claim 1. *See Fine*, 837 F.2d at 1076 (if an independent claim is nonobvious, then any claim depending therefrom is nonobvious); M.P.E.P. § 2143.03.

4. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being allegedly obvious over the alleged admitted prior art in view of European Patent Publication 1136325 by Denso. This rejection is respectfully traversed and should be reconsidered and withdrawn for at least the same reasons given above in favor of the patentability of independent claim 8. *See Fine*, 837 F.2d at

1076 (if an independent claim is nonobvious, then any claim depending therefrom is nonobvious); M.P.E.P. § 2143.03.

New Claims

The newly added claims are thought to be patentable over the prior art of record for at least the same reasons given above with respect to the original independent claims. Therefore, examination and allowance of the newly added claims is respectfully requested.

Conclusion

In view of the preceding arguments, all claims are believed to be in condition for allowance over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed.

The absence of a reply to a specific rejection, issue or comment in the Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicants expressly

do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

If the Examiner has any comments or suggestions which could place this application in better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

/Steven L. Nichols/

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